1. PROBLEM STATEMENT

This Problem Statement includes a description of: (a) violated Water Quality Objectives that prompted TMDL development, (b) watershed characteristics, and (c) impairments caused by pathogen loading.

1.1 WATER QUALITY OBJECTIVES

Water quality standards (WQS), pursuant to 40 CFR 130.2(d) and California Water Code (CWC) 13241, consist of beneficial uses and the water quality criteria (a.k.a. water quality objectives in the CWC) based on such uses. WQS adopted for the Colorado River Basin Region are contained in the Water Quality Control Plan for the Colorado River Basin Region (CRWQCB, 1994). The WQS for the Coachella Valley Storm Water Channel (CVSWC) are comprised of the beneficial uses of water and the water quality objectives (WQOs). The WQOs are either numerical or narrative and are designed to protect the most sensitive beneficial uses. In the CVSWC, the most sensitive designated beneficial uses to be addressed in the Pathogen TMDL include: Freshwater Replenishment (FRESH), contact and non-contact recreation (REC I and REC II); warm freshwater habitat (WARM); wildlife habitat (WILD); and preservation of rare, threatened, and endangered species (RARE).

Pathogens are present in the CVSWC at levels that violate quantitative water quality objectives established by the Regional Board to protect beneficial uses. These violations of water quality objectives indicate that the CVSWC beneficial uses are impaired. Tables 1 and 2 summarize water quality objectives and CVSWC beneficial uses.

Table 1: Water Quality Objectives

Indicator Parameter	30-Day Geometric Mean	30-Day Log Mean[a]	Maximum	Other
E. coli	126 MPN[b]/100 ml	--	400 MPN/100 ml	
Enterococci	33 MPN/100 ml	--	100 MPN/100 ml	
Fecal Coliform	--	200 MPN/100ml	--	[c]

a. Based on a minimum of no less than 5 samples equally spaced over a 30-day period.
b. Most probable number.
c. No more than 10% of total samples during any 30-day period shall exceed 400 MPN/100 ml.

Source: California Regional Water quality Control Plan for the Colorado River Basing Region 1994.

Table 2: Coachella Valley Storm Water Channel [a] Beneficial Uses

Designated Beneficial Uses of Water	Description
Freshwater Replenishment (FRSH)	Uses of water for natural or artificial maintenance of surface water quantity or quality.
Water Contact Recreation (REC I) [b]	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water skiing, skin and scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs.

Designated Beneficial Uses of Water	Description
Water Non-Contact Recreation (REC II) [b]	Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Warm Freshwater Habitat (WARM)	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Wildlife Habitat (WILD)	Uses of water that support terrestrial ecosystems including, but not limited to, the preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
Preservation of Rare, Threatened, or Endangered Species (RARE) [c]	Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

a. Section of perennial flow from approximately Indio to the Salton Sea.
b. Unauthorized use
c. Rare, endangered, or threatened wildlife exists in or utilizes some of this waterway. Responsibility for substantiation of the status of the species lies with the California Department of Fish and Game.

Source: California Regional Water Quality Control Plan for the Colorado River Basin Region 1994

1.2 WATERSHED CHARACTERISTICS

The CVSWC is located in the Coachella Valley in Riverside County, California. The valley is bounded by the San Bernardino and Little San Bernardino Mountains to the north, and the San Jacinto and Santa Rosa Mountains and the Salton Sea to the south. The channel is unlined and extends approximately 17 miles from Indio to the Salton Sea. The CVSWC is a constructed extension of the Whitewater River and serves as a depository and drainage way for irrigation return water, treated wastewater and stormwater runoff (Montgomery 1989).

The CVSWC is maintained by the Coachella Valley Water District (CVWD) for flood protection in the valley and serves as a master drain for the area from Indio to the Salton Sea (CVWD 2001). The average annual flow from the channel outlet to the Salton Sea is approximately 100,000 acre-feet per year (Montgomery 1989). Flows are decreasing in recent years due to changes in agriculture practices and suburban development.

The valley has been heavily agricultural since the 1900s. Agricultural lands are irrigated by groundwater and Colorado River water from the All American Canal. Although agriculture return water dominates CVSWC flow to the Salton Sea, three municipal wastewater treatment plants discharge to the channel as well. They are the Valley Sanitary District (VSD) Plant, the Coachella Sanitary District Wastewater Treatment Plant No. 2, and the CVWD Mid-Valley Plant.

Average annual precipitation on the valley floor (elevations less than 2,000 feet) is less than 1 inch and evapotranspiration could reach 50 inches in the Coachella Valley if water were available

(USDA 1980). Soils in the valley are excessively drained to somewhat poorly drained, nearly level to moderately steep, on alluvial fans and valley fill and in lacustrine basins.

Table 3: Soil Associations in the Coachella Valley

1	Niland-Imperial-Carsitas	Nearly level to moderately sloping	Moderately well drained to excessively drained	Sands, gravelly sands, cobbly sands, fine sands, and silty clays in lacustrine basins
2	Carsitas-Myoma-Carrizo	Nearly level to moderately steep	Somewhat excessively drained or excessively drained	Sands, fine sands, gravelly sands, cobbly sands, stony sands on alluvial fans and valley fill
3	Myoma-Indio-Gilman	Nearly level to rolling	Somewhat excessively drained to moderately well drained	Fine sands, very fine sandy loams, fine sandy loams, silty loams on alluvial fans
4	Gilman-Coachella-Indio	Nearly level to rolling	Somewhat excessively drained to moderately well drained	Fine sands, fine sandy loams, silt loams, loamy fine sands, and very fine sandy loams on alluvial fans
5	Salton-Indio-Gilman	Nearly level	Somewhat poorly drained to well drained	Silty clay loams, very fine sandy loams, fine sandy loams, and silt loams in lacustrine basins

Source: USDA Soil Conservation Service. 1980. Soil Survey of Riverside County, California, Coachella Valley Area.

1.3 IMPAIRMENT BY PATHOGENS

The CVSWC has been listed on the state's 303(d) list as impaired by pathogens of an unknown source. This violation of the standards set forth in the California Regional Water Quality Control Board, Colorado River Basin Region's Basin Plan is indicative of a public health threat and the impairment of the CVSWC beneficial uses. For these reasons, the CVSWC has been targeted for development and implementation of a TMDL that addresses pathogens. Sampling events to support source analysis and TMDL development are scheduled for 2002.